

AMENDMENTS TO THE DRAWINGS

Please add additional drawing sheets 8 and 9, containing Fig. 15(A) and Fig. 15(B), and Fig. 16(A) and Fig. 16(B), respectively.

Attachment: 2 New Sheets

REMARKS

The present invention relates to a woven or knitted fabric containing two different types of yarns, and to clothing containing the fabric.

In the Office Action dated May 13, 2008, which incorporated and superseded the incomplete Office Action dated March 20, 2008, first, the drawings were objected to by the Examiner since Referential Figures 1A, 1B, 2A, and 2B and the characters therein were not mentioned in the description, and the Examiner furthermore indicated that the features of the invention specified in the claims (with claims 13 and 15 being mentioned by the Examiner) must be shown in the drawings. In response to the Examiner's suggestion, Figs. 15(A), 15(B), 16(A), and 16(B) are added herein, supported by original claims and specification, including with respect to the claims noted by the Examiner, and description thereof has been added at page 14 of the specification. No new matter issue is raised.

Second, in Paragraph 3 at pages 4-7, claims 1-5, 7, 9, 12, 16, and 18-20 were rejected under 35 U.S.C. § 103(a) based on Doi et al (USP 6,403,216) in view of a 6/16/2000 online article by Horst Kopnick entitled Polyesters in Ulmann's Encyclopedia of Industrial Chemistry (Kopnick). Third, in Paragraph 4 at pages 7-8, claims 6 and 13 were rejected under 35 U.S.C. § 103(a) based on Doi et al in view of Kopnick, further in view of Chesebro (USP 5,095,548). Fourth, in Paragraph 5 at pages 8-10, claims 10, 11, 21-24 were rejected under 35 U.S.C. § 103(a) based on Doi et al in view of Kopnick, further in view of Dawson (USP 6,770,579). Fifth, in Paragraph 6 at page 10, claims 14 and 15 were rejected under 35 U.S.C. § 103(a) based on Doi et al in view of Kopnick further in view of Safrit et al (USP 4,341,096).

Lastly, at pages 10-11, claims 1-24 were provisionally rejected for obviousness-type double patenting over claims 1-20 based on co-pending Application No. 10/548,630. Regarding this last provisional rejection, Applicant respectfully requests that this provisional rejection be held in abeyance until one of the applications is issued as a U.S. patent.

In response to the Office Action, Applicant submits herewith, responsive to the Examiner's indication, Figs. 15-18, based on Referential Figures 1A, 1B, 2A and 2B.

Below, Applicant discusses in more detail the differences between the presently claimed invention and the cited art, based on which it will be seen that the rejection under 35 U.S.C. § 103(a) should now be withdrawn.

The woven or knitted fabric of the present claimed invention is characterized by the following features

Feature (i): The woven or knitted fabric contains yarns (1) having a high water-absorbing and self-elongating property and yarns (2) having a low water-absorbing and self-elongating property when wetted with water.

Feature (ii): The yarns (1) and (2) satisfy the requirement:

$$A/B \leq 0.9$$

determined by the testing procedures as defined in claim 1.

Feature (iii): The yarns (1) are constituted from polyetherester fibers formed from polyetherester elastomer comprising hard segments comprising polybutylene terephthalate blocks and soft segments comprising polyethylene glycol blocks having a number average molecular weight of 1,000 to 6,000.

Feature (iv): The ratio by mass of the hard segments to the soft segments in the polyetherester elastomer is in the range of from 30/70 to 70/30.

The combination of features (i), (ii), (iii), and (iv) together enables the resultant woven or knitted fabric to exhibit a specific performance such that when wetted with water, the wetted fabric exhibits an increased air permeability compared to that before being wetted, and when dried, the dried fabric exhibits a decreased air-permeability compared to that before being dried, and the damage to the dimensions of the fabric by wetting or drying is relatively small.

Thus, the woven or knitted fabric of the present claimed invention is appropriate to use for underwear and sportswear.

U.S. Patent 6,403,216 (Doi et al)

Doi discloses a moisture-absorbable synthetic fiber having an improved moisture-releasing property, a high elongation and a high stretch-recovery. The synthetic fiber of Doi includes polyurethane type synthetic fiber or polyether-ester type synthetic fiber. Also, Doi teaches, in column 13, lines 39 to 47, as follows.

“Polyether-ester type synthetic fiber is one having hard segment including, for example, aromatic polyester such as polytetramethylene terephthalate, polytrimethylene terephthalate or polyethylene terephthalate and soft segment including, for example, aliphatic polyether glycol such as polytetramethylene glycol or polypropylene glycol, and aliphatic polyester glycol composed of adipic acid and 1,6-hexanediol or azelaic acid and 3-methyl-1,5-pentanediol”.

Doi is quite silent as to the polyetherester elastomer fiber having polybutylene terephthalate hard segments and polyethylene glycol soft segments having a number average molecular weight of 1,000 to 6,000, usable for the present invention.

Applicant notes that no polyetherester elastomer fiber is produced or used in Examples 1 to 17 of Doi.

Doi teaches, in the ABSTRACT, as follows.

“The synthetic fiber maintains a high strength at break of an elastic fiber component thereof also in the state of having absorbed moisture, is excellent in color fastness to rubbing, and can be used for manufacturing a stretch fiber fabric product excellent in comfort through blending with another fiber material. The synthetic fiber can be produced by incorporating a water absorption resin having a water absorption ratio in a range from 500 to 4000% by weight into an elastic fiber such as a polyurethane fiber or a polyurethane-urea fiber in a finely dispersed state in an amount in a range from 1 to 15% by weight relative to a fiber-forming polymer”. (emphasis added)

Doi also teaches, at column 14, line 58 to column 15, line 3, as follows.

“The synthetic fiber according to the present invention may be mixed with other materials in accordance with the use thereof, in which there is no limitation in kind, form and size thereof. For example, the material includes natural fiber represented by cotton, wool or rammie, regenerated fiber represented by viscose rayon or cuprammonium rayon, synthetic fiber represented by polyester or nylon and, further, elastic fiber having no

moisture absorbability. A spun yarn mixedly spun with natural fiber represented by cotton or other fibers, an entangled mixed yarn (mixed with fibers having a different shrinkage or a high-strength), a twisted union yarn, a composite false-twisted yarn or a double-feed type air-jet textured yarn may be used.”

Namely, Doi teaches that the moisture-absorbing and releasing synthetic fibers can be mixed with other types of fiber to form a mixed fiber material, for example, mixed fiber yarns. However, Doi does not teach or suggest a woven or knitted fabric formed from two different types of yarns, namely yarns (1) having high water-absorbing and self-elongating property and yarns (2) having low water-absorbing and self-elongating property, when wetted with water, i.e., feature (i) of the present claimed invention.

Further more, Doi is quite silent as to feature (ii) of the present invention.

Still further, Doi is quite silent as to features (iii) and (iv) of the present invention.

Yet further, Doi does not teach or suggest the specific advantages derived from the combination of features (i) to (iv) altogether. Accordingly, Doi does not affect the unobviousness of the woven or knitted fabric as claimed in amended claim 1 of the present application.

Ulmann's Encyclopedia of Industry Article entitled Polyesters (Kopnick)

The Kopnick reference discloses polyetherester polymer comprising hard segments formed from polybutylene terephthalate and soft suggest formed from polybutylene glycol or

polyethylene glycol. However, the Kopnick reference does not teach or suggest that in the polyether-ester elastomer for the high water-absorbing and self-elongating property when wetted with water, the soft segments formed from polyethylene glycol having a specific number average weight of 1,000 to 6,000 are combined with hard segments formed from polybutylene terephthalate, and the mass ratio of the hard segments to the soft segments is controlled to 30/70 to 70/30.

Thus, even if the polyether-ester polymer disclosed in the Kopnick reference is employed as the polyether-ester polymer for the moisture-absorbing/releasing synthetic fiber fabric, the resultant fabric does not provide all of features (i), (ii), (iii) and (iv), in contrast to the present claimed invention.

U.S. Patent 5,095,548 (Chesebro, Jr.)

Chesebro, Jr. discloses a sock containing a hydrophobic yarn and a hydrophilic yarn. However, Chesebro, Jr. does not teach or suggest the high water-absorbing and self-elongating yarns (1) as defined by features (iii) and (iv) of amended claim 1 of the present application. Also, Chesebro, Jr. is quite silent as to feature (ii) of the present invention.

Accordingly, Chesebro, Jr. does not affect the unobviousness of the present invention as claimed in amended claim 1.

U.S. Patent 6,770,579 (Dawson)

Dawson discloses a smart film or material comprising a layer (1) and humidity sensitive discrete areas (2) formed in the surface of the layer (1) and having a hydrophilic property different from that of the layer (1).

However, Dawson does not teach or suggest the high water-absorbing and self-elongating yarns (1) as defined by features (iii) and (iv) of amended claim 1. Also, Dawson is quite silent as to feature (ii) of the present invention.

Accordingly, Dawson does not affect the unobviousness of the present invention as claimed in amended claim (3).

U.S. Patent 4,341,096 (Safrit)

Safrit discloses a triple layer knitted fabric having improved cushioning and moisture-absorbing characteristics. In the triple layers of the knitted fabric, inside and outside layers are formed from a hydrophobic yarn and an intermediate layer is formed from a hydrophilic yarn.

However, Safrit is quite silent as to the high water-absorbing and self-elongating yarns (1) as defined by features (iii) and (iv) of amended claim 1 of the present application.

None of the cited references teach, suggest, or otherwise provide for the high water-absorbing and self-elongating yarns (1) as defined by features (iii) and (iv) of amended claim 1. Also, all of the cited references are silent as to feature (ii) of the amended claim 1.

It is thus seen that no combination of the cited references teaches, suggests, motivates, or provides other reason based on which a person of ordinary skill in the art would be led to a woven or knitted fabric having features (ii), (iii) and (iv) combined with feature (i), and thus cannot affect the unobviousness of the present invention.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby earnestly solicited.

If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned attorney at the local Washington, D.C. telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.


Respectfully submitted,

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